Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						1	3	8	0	/	3	H	Signature	

Paper Reference(s)

1380/3H

Examiner's use only

Team Leader's use only

O Level

Mathematics (Linear) – 1380

Paper 3 (Non-Calculator)

Surds and Indices

Past Paper Questions

Arranged by Topic

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers

Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 26 questions in this question paper. The total mark for this paper is 100.
There are 24 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

Leave blank

1. Work out $(2 + \sqrt{3})(2 - \sqrt{3})$

Give your answer in its simplest form.

.....

Q1

(Total 2 marks)

Leave blank

2. (a) Write down the value of $49^{\frac{1}{2}}$

.....

(1)

(b) Write $\sqrt{45}$ in the form $k\sqrt{5}$, where k is an integer.

.....

(1)

Q2

(Total 2 marks)

Leave blank

3. Find the value of

(i) 6^0

.....

(ii) $64^{\frac{1}{2}}$

.....

(iii) $\left(\frac{27}{8}\right)^{-\frac{2}{3}}$

.....

(Total 4 marks)

Leave blank

4. (a) Simplify $4p \times 5q$

.....

(1)

(b) Simplify $d \times d \times d \times d$

.....

(1)

(c) Expand $4(3a - 7)$

.....

(2)

(d) Expand and simplify $2(2n + 3) + 3(n + 1)$

.....

(2)

(e) Simplify $t \times t^2$

.....

(1)

(f) Simplify $m^5 \div m^3$

.....

(1)

Q4

(Total 8 marks)

Leave blank

5. (a) Simplify $p^5 \times p^4$

.....

(1)

(b) Simplify $q^5 \div q^2$

.....

(1)

(c) Simplify $12tu^6 \div 6tu^5$

.....

(2)

(d) Simplify $(9w^2y^6)^{\frac{1}{2}}$

.....

(2)

(e) For $x > 1$, write the following expressions in order of size.
Start with the expression with the least value.

x^0 x^2 x x^{-2} $x^{\frac{1}{2}}$

.....

(2)

Q5

(Total 8 marks)

Leave blank

6. (a) Simplify $m^3 \times m^4$

.....

(1)

(b) Simplify $p^7 \div p^3$

.....

(1)

(c) Simplify $4x^2y^3 \times 3xy^2$

.....

(2) **Q6**

(Total 4 marks)

Leave blank

7. (a) Expand and simplify $3(x + 4) + 5(2x + 1)$

.....

(2)

(b) Simplify $t^4 \times t^6$

.....

(1)

(c) Simplify $p^8 \div p^5$

.....

(1)

(d) Simplify $(x^4)^3$

.....

(1) **Q7**

(Total 5 marks)

Leave blank

8. (a) Simplify $t^6 \times t^2$

.....

(1)

(b) Simplify $\dfrac{m^8}{m^3}$

.....

(1)

(c) Simplify $(2x)^3$

.....

(2)

(d) Simplify $3a^2h \times 4a^5h^4$

.....

(2) **Q8**

(Total 6 marks)

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